

AMENDMENTS TO THE SPECIFICATION

Please delete the following paragraphs of the specification: [00016], [00019] and [00021].

Please add the following paragraph to the specification immediately after paragraph [00075] and before the heading "Examples":

~~Figure 7 shows regeneration~~ Regeneration of soybean plants via somatic embryogenesis can be done by the following steps: (a) Immature zygotic embryo cotyledon explants are grown on medium containing 40 mg/L 2,4-D (D40 medium), (b) Somatic embryo induction is carried out on D40 medium, (c) Somatic embryo proliferation is carried out on D20 medium, (d) Matured cotyledonary stage embryos are grown on medium containing 6% maltose (MSM6), (e) Desiccation of matured embryos is carried out, (f) Germination is carried out on medium containing 3% sucrose (MSO3), (g) Germinated somatic embryo are produced with well defined root and shoot system, and (h) Regenerated soybean ~~plant~~ plants are transferred to soil.

Please amend the following paragraphs of the specification as indicated below:

[00015] ~~Figures 2a1 to 2a 5 demonstrate that 5 mM AEC can prevent the germination of soybean seeds; 2.5 mM is quite effective. Figures 2b 1 and 2b 2 show that 500 μM AEC completely prevented the germination of soybean somatic embryos; 100 μM AEC was quite effective. Figure [[2c]] 2 shows the use of 0.5 mM, 1.0, mM, 1.5, mM, 2.5 mM and 5.0 mM concentrations of AEC and illustrates that 1.5 mM AEC is sufficient to kill proliferating soybean somatic embryos on 1/5th D20 medium (1/5 MS salts, 1/5 B5 vitamins and 20 mg/L 2,4-D).~~

[00020] Figure [[6]] 5 demonstrates the expression of *E. coli* DHPS in different transgenic soybean somatic embryo lines and negative control embryos.

[00022] ~~Figures 8a and 8b~~ 6a and 6b show protocols for the transformation of soybean by particle bombardment using liquid ~~[[8a]]~~ (6a) and solid ~~[[8b]]~~ (6b) media protocols.

[00064] A variety of transformation protocols may be used with the inventive process. For example, Figures ~~8a and 8b~~ 6a and 6b show the transformation of soybean by particle bombardment using liquid and solid media protocols using somatic embryos (Trick et al., 1997). Once embryogenic cultures are established, one can get plenty of material with a liquid medium based protocol for transformation. However, with older cultures the regenerated plants are mostly sterile (Hazel et al., 1998). With solid medium-based protocols somatic embryos need to be induced regularly. The maturation of somatic embryos on MSM6 medium takes much longer than with liquid medium based protocols with FL-Superlite (Samoylov et al., 1998).

[00086] ~~Figures 2a1 to 2a-5 demonstrate that 5~~ Five mM AEC can prevent the germination of soybean seeds; 2.5 mM is quite effective. ~~Figures 2b-1 and 2b-2 show that 500 μ M AEC~~ completely prevented the germination of soybean somatic embryos; 100 μ M AEC was quite effective. Figure ~~[[2c]]~~ 2 shows the use of 0.5 mM, 1.0, mM, 1.5, mM, 2.5 mM and 5.0 mM concentrations of AEC and illustrates that 1.5 mM AEC is sufficient to kill proliferating soybean somatic embryos on 1/5th D20 medium (1/5 MS salts, 1/5 B5 vitamins and 20 mg/L 2,4-D). ~~Figure 2d shows spray~~ Spray studies have been done using major dicot and monocot weeds, pigweed (*Amaranthus retroflexus*) and giant foxtail (*Setaria faberi*) in addition to tobacco. These experiments using 7 to 10 day old seedlings show 20 mM AEC is lethal to pigweed, foxtail and tobacco.

[00089] ~~Figure 5 shows~~ GUS staining of DHPS transgenic embryos has been done.

[00090] Figure ~~[[6]]~~ 5 demonstrates the expression of *E. coli* DHPS in different transgenic soybean somatic embryo lines and negative control embryos.

[00097] The broadest class of major herbicides is the acetolactate synthase (ALS) inhibitors including the sulfonylureas, imidazolinones, sulfonamides and pyrimidinylthiobenzoate. DuPont and Syngenta have commercialized no less than 12 different sulfonylureas that target ALS. American Cyanamid (now BASF) have at least 6 different imidazolinones herbicides on the market all of which also target ALS (Shaner and O'Connor, 1991). ALS catalyzes the first step

in the biosynthesis of the essential amino acids valine, isoleucine and leucine, ~~as set forth in Figure 9.~~

[00099] Roundup (glyphosate) also functions as an amino acid biosynthesis inhibitor targeting 5-enolpyruvylshikimate 3-phosphate (EPSP) blocking aromatic amino acid biosynthesis, ~~as shown in Figure 10.~~

[000101] The selective agent AEC, ~~the chemical structure of which is shown in Figure 11,~~ can be synthesized using N-(tert-butoxycarbonyl)serine and ethanolamine (Arnold et al., 1988). AEC is an inhibitor of dihydrodipicolinate synthase (DHPS) killing cells and tissues due to an inability to synthesize lysine (Perl et al., 1993; Ghislain et al., 1995; Vauterin et al., 2000). AEC also inhibits AK and lysine, which is also an inhibitor of DHPS (Negrutiu et al., 1984). AEC is shown below to be a more effective more effect herbicidal agent than lysine or lysine + threonine.